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ANNUAL FOREST INSECT STATUS REPORT
SEASON 1935

To Officers in Charge of Organizations:

It is requested that this report be circularized through that portion of your organization interested in forest protection.

James C. Evenden
Entomologist

Forest Insect Laboratory
Coeur d'Alene, Idaho
February 10, 1936

ANNUAL FOREST INSECT STATUS REPORT
SEASON 1935

This report has been prepared in continuation of the practice of submitting to all Forest Supervisors and interested forest agencies a summary of the forest rangers' Annual Insect Status Reports of Region 1, with a brief review of the season's important entomological activities. I again wish to emphasize the value of the ranger reports in depicting the status of insect conditions throughout the region and in building the reference file maintained at this laboratory. This year's reports continue to indicate an increased understanding and appreciation of the economic importance of forest insects.

On September 1, 1935, a letter was written to each Forest Supervisor requesting a "follow-up" report on all situations reported in 1934. This action was taken to provide an annual record of all reported outbreaks until such a time as the infestations no longer warranted such consideration. As a splendid response was secured from these letters, this practice will be continued in the future, as these subsequent reports materially increase the value of the data obtained.

There are still three types of forms being used for the submission of ranger reports. Two years ago a new form was prepared which, in lieu of a number of questions, provided a large space for the remarks of the reporting officer. It is believed that this form is superior to the others in presenting a better depiction of existing situations, and it is recommended that it be adopted for all forests. It is regrettable that many forest officers are apparently still somewhat reluctant in offering their personal opinions relative to the details of the situation being reported. Such a reaction will naturally defeat the objective of the new forms, as their remarks, which may not always be entomologically correct, provide a better description of the situation than the "Yes" and "No" answers to a few conventional questions.

The rangers' annual reports provide the only source of information relative to the status of forest insect conditions throughout the region. If this information is to be accepted as depicting the actual condition, it must be based upon reliable data. Some field work, varying in amount with the character of the infestation, is essential in reporting upon each situation, and all areas should be examined annually, for though no infestation exists one season, there is no assurance that the same condition will prevail the following year. It is believed that many officers minimize the importance of what is called a normal infestation and are perhaps a bit hasty in considering reported infestations as being normal conditions. Normal infestations are potential epidemics, and the change often takes place so quickly that, unless annual examinations are made, a situation may get completely out of hand before its

seriousness is recognized. Examinations of infested areas must be considered as special projects, as it has been demonstrated over and over again that they can not be made in conjunction with other lines of forestry work.

SUMMARY OF RANGER REPORTS

	1934	1935
Number of Forests Reporting*	15	16
Number of Ranger Districts Reporting	90	91
Number of Insect Infestations Reported	141	183
Number of Reports Depicting No Infestations	17	9
Number of Secondary Insects Reported	14	30
Number of Dendroctonus Reports	101	144
Number of Fir Engraver Beetle Reports	2	1
Number of Spruce Budworm Reports	7	7
Increasing Infestations	30	43
Decreasing Infestations	70	111
Normal Infestations	24	20
Infestations Reported as no Longer Existing	—	.8

* As the Coeur d'Alene Forest was covered by an extensive survey, no ranger reports were submitted.

REPORTS OF MISCELLANEOUS SECONDARY INSECTS
(I-Increasing D-Decreasing N-Normal)

Cabinet National Forest -	Alpine fir beetle (Dryocoetes confusus)	N
	Fir engraver (Scolytus ventralis)	I
	Cooley's spruce gall aphid (Adelges cooleyi)	N
	Spider mite on cedar (Oligonychus americanus)	D
	Alder flea beetle (Altica bimarginatus)	N
	Pine leaf scale (Chionaspis pinifoliae)	N
	Tortoise shell butterfly (Aglais californica)	N
	Douglas fir cone moth (Zeiraphera diniana?)	D
	Oregon engraver (Ips oregoni)	D
	Engraver beetle (Ips sp.)	D
	Pine butterfly (Neophasia menapia)	I
	Spider mites-ponderosa pine (Oligonychus amer.)	I
	Aphis-lodgepole and ponderosa pine	I
	Aphis-white pine (Pineus pinifoliae)	I
	Aphis-ponderosa pine	I
	Aphis-white pine	
Clearwater National Forest -	Pine butterfly (Neophasia menapia)	N

Custer National Forest -	Pine leaf scale (Chionaspis pinifoliae)	D
	Ips sp.-ponderosa pine	D
	Aspen borer	I
	Tip moth-ponderosa pine	D
Flathead National Forest -	Larch sawfly (Nematus erichsonii) ?	I
	" " " " ?	D
	Aphis-white pine	I
Kootenai National Forest -	Larch sawfly (Nematus erichsonii) ?	I
	" " " " ?	I
	Douglas fir needle miner (?)	D
	Alpine fir beetle (Dryocoetes confusus)	D
	Engraver beetle-lodgepole (Ips sp.)	D
	Engraver beetle-ponderosa (Ips sp.)	D

SUMMARY OF INSECT INFESTATIONS REPORTED

Insect	Year	Inc.	Dec.	Normal	Dropped	Total
Mountain Pine Beetle D. monticolae Hopk.	1935	24	79	8	6	117
	1934	17	52	8		77
	1933	33	45	17		95
	1932	64	20	12		96
	1931	51	27	14		92
	1930	60	24	14		98
	1929	45	14	23		82
	1928	33	13	10		56
Western Pine Beetle D. brevicomis Lec.	1935	1	6	1	1	9
	1934	1	5	4		10
	1933	5	2	1		8
	1932	2	2	0		4
	1931	2	1	1		4
	1930	4	1	0		5
	1929	0	3	4		7
	1928	5	4	2		11
Douglas Fir Beetle D. pseudotsugae Hopk.	1935	2	10	3		15
	1934	3	8	3		14
	1933	5	4	5		14
	1932	13	1	5		19
	1931	2	5	1		8
	1930	4	2	4		10
	1929	2	1	2		5
	1928	5	4	2		11

SUMMARY OF INSECT INFESTATIONS REPORTED (CONT.)

Insect	Year	Inc.	Dec.	Normal	Dropped	Total
	1935	1	0	0		1
	1934	0	1	1		2
	1933	4	0	0		4
True Fir Beetle	1932	5	0	0		5
Scolytus ventralis	1931	0	0	1		1
Lec.	1930	2	0	0		2
	1929	1	0	0		1
	1928	0	0	1		1
	1935	1	3	2	1	7
	1934	3	4	0		7
	1933	3	4	4		11
Spruce Budworm	1932	3	7	1		11
Cacoecia fumiferana	1931	1	7	1		9
Clem.	1930	6	5	6		17
	1929	4	9	3		16
	1928	11	12	4		27

The above table shows a marked increase in the number of mountain pine beetle infestations for 1935. This increase is partly due to the fact that in 1935 a follow-up report was made of all situations that had been recorded in 1934, whereas in the past many of them would have been disregarded. There were no other changes in the number of reports of any other primary insect.

MOUNTAIN PINE BEETLE INFESTATION
WHITE PINE

The following table shows the present status of the mountain pine beetle infestations in white pine as compared to the 1934 situations:

Forest	No. of Reports		Number of Infestations							
			Increasing		Decreasing		Normal		Stopped	
	1934	1935	1934	1935	1934	1935	1934	1935	1934	1935
Blackfeet	-	-	-	-	-	-	-	-	-	-
Cabinet	2	4	1	-	-	4	1	-	-	-
Clearwater	-	1	-	-	-	1	-	-	-	-
Coeur d'Alene	-	-	-	-	-	-	-	-	-	-
Flathead	1	1	-	-	1	1	-	-	-	-
Nezperce	-	1	-	-	-	1	-	-	-	-
Pend Oreille)										
Kaniksu)	6	6	-	-	4	2	2	2	-	2
Kootenai	2	6	-	2	2	4	-	-	-	-
Selway	-	-	-	-	-	-	-	-	-	-
St. Joe	4	5	-	3	2	1	2	-	-	1
Total	15	24	1	5	9	14	5	2		3

The preceding table shows a rather marked increase in the number of infestations reported, which makes the situation comparable to 1933, when the same number of reports were submitted. However, it is believed that most of this increase occurred by including with this year's reports some of the situations recorded in 1934 that under previous practices have been dropped from consideration. Four increasing infestations of this insect were reported in 1935 as against one in 1934. One of these situations was on the Kootenai, with the other three on the St. Joe. Had reports of the Coeur d'Alene infestation been included with these data, the number of increasing infestations would have been materially increased.

The Cabinet Forest reports four infestations (Elk Creek, Twelve Mile Creek, Big Creek, and Mullan Gulch) as against two of last year. The Elk Creek infestation, with an outbreak on the head of Cole and White Pine Creeks, was reported last year. Road slash in the Twelve Mile and Big Creek drainages was also infested with the mountain pine beetle.

One infestation was reported from the Canyon District of the Clearwater Forest, which covered the Sheep Mountain, Deadhorse, Sheep Mountain Creek, Skull Creek, Isabella Creek, and Wallow Mountain areas; however, it is believed that most of this infestation is perhaps in lodgepole pine. An extensive survey of this forest conducted by officers from this laboratory revealed a mountain pine beetle infestation in all white pine stands which is rather severe in the Tepee Creek drainage.

As all white pine stands of the Coeur d'Alene Forest were covered by an extensive survey during September, no ranger reports were submitted. However, the data secured show that the mountain pine beetle infestation is still present in all areas, and in most cases has increased in severity during the past season.

The Flathead again reports the Elk Park infestation on the South Fork of the Flathead River, though no new attacks were recorded as occurring during the past season.

The Nezperce reports the mountain pine beetle as being present in white pine and lodgepole pine throughout the Middle Fork District. As there is not a great volume of white pine in this area, most of the infestation is believed to be in lodgepole.

The Kaniksu reports six infestations (Pass Creek, Sullivan Creek, Upper Priest River, Mission Creek, Placer Creek Ridge, and Smith Creek), all of which were previously reported in 1934.

Six reports of infestations in white pine were received from the Kootenai (Mill Creek, Upper Ford, North Fork of Big Creek, Spar Lake, Stanley Creek, O'Brien Creek), as against two in 1934. Data from

an extensive survey in the fall of 1935 show the presence of this insect in all white pine stands of the forest. However, only on one area (Meadow Creek) was the infestation sufficiently severe to warrant the recommendation of control.

The St. Joe reports five infestations (Fishhook Creek, Pole Mountain, Middle Fork St. Maries River, Meadow Creek, and Roundtop District), of which all but the St. Maries area were reported in 1935. This forest was also covered by an extensive survey during the past season, with no very serious situation being recorded.

MOUNTAIN PINE BEETLE IN LODGEPOLE PINE

Forest	No. of Reports		Number of Infestations							
			Increasing:		Decreasing:		Normal		Stopped	
	1934	1935	1934	1935	1934	1935	1934	1935	1934	1935
Absaroka	1	2	-	1	-	1	1	-	-	-
Beaverhead	8	8	2	3	6	5	-	-	-	-
Bitterroot	5	6	2	-	3	4	-	1	-	1
Cabinet	2	5	1	-	1	5	-	-	-	-
Clearwater	-	2	-	-	-	2	-	-	-	-
Coeur d'Alene*	-	-	-	-	-	-	-	-	-	-
Custer	-	1	-	-	-	-	-	1	-	-
Deerlodge	6	6	-	-	6	6	-	-	-	-
Flathead	2	3	-	-	2	3	-	-	-	-
Gallatin	5	5	4	1	1	2	-	2	-	-
Helena	4	5	-	1	4	4	-	-	-	-
Kootenai	3	3	1	1	2	2	-	-	-	-
Lewis & Clark	-	-	-	-	-	-	-	-	-	-
Lolo	9	8	2	1	7	7	-	-	-	-
Nezperce	5	6	1	1	4	5	1	-	-	-
Selway*	4	-	1	-	3	-	-	-	-	-
St. Joe	3	3	-	3	1	-	2	-	-	-
Total	57	63	14	12	40	46	4	4		1

* No report.

The above tabulation shows the presence of a mountain pine beetle infestation throughout the lodgepole pine stands of the region that has not changed to any great extent during the past season. An increased number of infestations were reported from the Bitterroot, Clearwater, and Nezperce Forests that are assumed to be old infestations reported for the first time this season. An additional report was received from the Big Prairie District of the Flathead; however, in 1934 the two infestations present within this district were recorded under one report. A new outbreak was reported from the Lincoln District of the Helena, which at present is apparently on privately owned lands outside of the forest boundary. A severe epidemic swept most of the lodgepole pine stands of this area some fifteen years ago.

The following tabulation lists the reports received of mountain pine beetle infestations in whitebark pine, limber pine, and ponderosa pine:

MOUNTAIN PINE BEETLE INFESTATIONS

Forest	Increasing	Decreasing	Normal	Stopped
Whitebark Pine				
Absaroka	2			
Bitterroot		2		1
Deerlodge	1	1		
Gallatin	1		1	
Lolo		1		
Nezperce		1		
St. Joe	2			
Limber Pine				
Absaroka	1			
Beaverhead	2	1		
Ponderosa Pine				
Bitterroot		4	1	1
Cabinet		1		
Custer		1		
Deerlodge		1		
Lolo		3		
St. Joe	1	3		

An infestation of the mountain pine beetle is present in nearly all of the whitebark pine stands of the region. This assumption is especially true for those areas adjacent to infested lodgepole pine, though quite often the whitebark pine stands are infested ahead of the adjacent lodgepole. When ponderosa pine occurs in association with or adjacent to an area of infested lodgepole, one may be reasonably sure that this tree species will be attacked by the insects. Usually such outbreaks do not occur until the infestation in lodgepole has reached a severe epidemic status, and only last as long as this condition exists.

WESTERN PINE BEETLE INFESTATION
PONDEROSA PINE

Forest	No. of Reports		Number of Infestations							
			Increasing:		Decreasing:		Normal		Stopped	
	1934	1935	1934	1935	1934	1935	1934	1935	1934	1935
Bitterroot	1	-	-	-	1	-	-	-	-	-
Cabinet	2	2	1	-	-	2	1	-	-	-
Flathead	-	-	-	-	-	-	-	-	-	-
Custer	-	-	-	-	-	-	-	-	-	-
Kootenai	2	3	-	1	-	1	2	1	-	-
Lewis & Clark	1	1	-	-	-	-	1	-	-	1
Lolo	1	1	-	-	1	1	-	-	-	-
Nezperce	2	2	-	-	2	2	-	-	-	-
Selway	1	-	-	-	1	-	-	-	-	-
Total	10	9	1	1	5	6	4	1	-	1

Though practically the same number of western pine beetle infestations were reported in 1935 as in 1934, it is believed that there has been a decided decrease in the severity of the situations. One new increasing infestation was reported from the Rabbit Creek drainage (Sylvanite District) of the Kootenai. However, this situation is not considered as being serious.

DOUGLAS FIR BEETLE INFESTATION
DOUGLAS FIR

Forest	No. of Reports		Number of Infestations							
			Increasing:		Decreasing:		Normal		Stopped	
	1934	1935	1934	1935	1934	1935	1934	1935	1934	1935
Absaroka	2	2	-	-	1	1	1	1	-	-
Beaverhead	-	-	-	-	-	-	-	-	-	-
Bitterroot	-	-	-	-	-	-	-	-	-	-
Blackfeet	-	-	3	-	-	-	-	-	-	-
Cabinet	1	2	1	-	1	2	-	-	-	-
Coeur d'Alene	-	-	-	-	-	-	-	-	-	-
Flathead	7	7	3	-	3	6	1	1	-	-
Gallatin	-	1	-	-	-	-	-	1	-	-
Helena	1	1	-	-	1	1	-	-	-	-
Kaniksu	-	-	-	-	-	-	-	-	-	-
Kootenai	2	2	-	2	1	-	1	-	-	-
Lolo	1	-	-	-	1	-	-	-	-	-
Nezperce	-	-	-	-	1	-	-	-	-	-
Total	14	15	7	2	9	10	3	3		

This season's reports indicate but little change in the status of the Douglas fir beetle infestation within the region. Infestations of this beetle are distributed throughout all Douglas fir stands of the Northern Rocky Mountains, where during the past ten years the losses varied from a large percentage of the timber within the infested area

to small spots of dead trees. The Kootenai reports increasing infestations on Derozier Creek and throughout the entire Rexford District. This is the first report of the Rexford infestation, which is assumed to have started from a severe 1933 blow-down.

SPRUCE BUDWORM INFESTATIONS

In 1934 there were seven spruce budworm infestations reported as against eleven in 1933. Though this season there was no change from the number of reports submitted in 1934, two new outbreaks were recorded. Reports were received from the following forests: Absaroka (1), Bitterroot (1), Custer (1), Helena (1), and Nezperce (3). A new report was received from the Salmon District on the Bitterroot which lists an infested area of some 200 acres in the Deep Creek drainage. The Custer also reported, for the first time, a light infestation throughout the Stillwater District. Infestations of this insect have been present in this region for a number of years. In 1928 reports were submitted showing that there were 789,000 acres of timber infested by this insect. At the present time the infestation has decreased to a few thousand acres.

LARCH SAWFLY (NEMATUS ERICHSONII)

The first report of this insect from the western United States was received from the Flathead National Forest in 1934. Two additional reports were received from the Kootenai Forest during the past season. What this situation holds in store for the larch stand of this region no one can say, though its potential seriousness is fully appreciated. If this is the first appearance of this insect in the Northwest, it is apparently well adapted to this region and is rather firmly established in its new habitat. The reported outbreaks will be examined carefully during the coming season, and as close a check as possible maintained upon the possible damage that may result.

MISCELLANEOUS INSECTS

Of the secondary insects reported as being destructive to forest trees there are only a few which occupy a position of economic importance. The fir engraver continues to destroy large volumes of white fir throughout the region. Alpine fir is also being destroyed by the alpine fir beetle. Ips oregoni continues to appear in sporadic outbreaks throughout the ponderosa pine stands. Other insects which seem to be occupying positions of more or less economic importance are the white pine aphid, spider mites, pine leaf scale, and the alder flea beetle.

FIELD SEASON 1935

Cabinet National Forest

A large number of logs, created in 1933 during the construction of forest roads in the Big Creek and Twelve Mile drainages, were heavily attacked by the mountain pine beetle the subsequent season. This condition was recorded early in June 1935, and CCC enrollees used to treat all infested logs. A number of infested trees that were adjacent to the road were treated during this project. Unfortunately, the work was not completed until after some of the insects had developed to new adults, which by the peeling method of control necessary at that time were not destroyed. An examination of these two areas early in October indicated that, though the infestation within the Big Creek area had been rather thoroughly eliminated, there was a rather heavy infestation in the standing trees of the Twelve Mile drainage, for which treatment has been recommended.

Coeur d'Alene National Forest

During May and June 1935, approximately 11,000 acres of white pine type were covered by control, on which some 3,000 trees were treated. This project was conducted under a small NIRA allotment, which permitted the establishment of only two camps, with the remainder of the work being done with CCC labor. Due to the late start secured with this project it was impossible to complete all areas for which control had been planned.

The survey of this forest, which has been an annual project since 1930, was repeated last season. Though an infestation of the mountain pine beetle still exists in all white pine areas, no control work has been recommended for the coming season.

Kootenai National Forest

No control work was conducted on this forest during the past season. During the fall a survey of all white pine stands was conducted to determine the present status of the mountain pine beetle infestation. The data secured showed that with the exception of the South Fork of Meadow Creek, for which control has been recommended, the present status of the infestation was not considered as being serious.

Clearwater National Forest

An extensive survey to determine the existing status of the mountain pine beetle infestation within the white pine stands of the

Clearwater was conducted during August. Though a similar survey conducted in the fall of 1934 revealed what appeared to be a rather serious situation, this season's data showed a marked reduction in the severity of the infestation in all areas except the Tepee Creek drainage, where a slight increase was recorded. No control measures have been recommended.

St. Joe National Forest

An extensive insect-damage survey, comparable to the Clearwater project, was made of the white pine types of the St. Joe during September 1935. Data from this survey reveal the presence of an infestation of the mountain pine beetle in all white pine stands, though at this time it is hardly above what could be called a normal condition. Though no control measures are considered necessary, the situation should be kept under careful observation to prevent the development of more serious conditions.

Cabinet National Forest, Thompson River Drainage

At the request of the Northern Pacific Railway Company, the A.C.M. Company, and the State of Montana, an extensive survey of the ponderosa pine stands of the Thompson River drainage was instituted late in July 1935 for the purpose of determining the status of the western pine beetle infestation. Some 305,000 acres were covered by this survey, which included the Fisher River drainage. The data secured showed the 1935 loss to be approximately 11,000 trees, or some 9,060,000 B.F. In the preceding four years the loss had been 84,849,000 B.F., or a total for the five years of 93,909,000 B.F. However, as the 1935 loss indicates a material decrease in the severity of the infestation, no control measures were recommended, as the infestation is not above a normal condition.

Shoshone National Forest

The fifth year of control against an outbreak of the Douglas fir beetle in the Cody Canyon of the Shoshone National Forest was instituted in the fall of 1935 and will continue through the winter. Labor from a CCC camp is being used to conduct this project, and an attempt will be made to treat the infestation within the back areas, which in past years have been a source of reinfestation to the more accessible treated units.

Blackfeet Indian Reservation

Control measures were instituted in May 1935 to combat an outbreak of the Douglas fir beetle in the Douglas fir stands along the Hudson Bay Divide of the Blackfeet Indian Reservation. As this area was adjacent to

the Glacier National Park, this project had the twofold objective of preserving the commercially valuable timber stands of the reservation as well as preventing the development of a serious epidemic which would undoubtedly spread into the valuable aesthetic timber stands adjacent.

CONCLUSION

In concluding this summary there would seem to be no better remarks which I could make than to repeat the suggestions that were used in the conclusion of last year's report:

1. It is believed that the value of the information secured from these reports justifies the allocation of sufficient time for adequate examinations so that the essential data will be secured. Some field work will be necessary for all infestations if an accurate report is submitted.

2. The names of the different areas should be standardized and used each year. If this is done, it will permit a proper comparison of the reports for the different years.

3. When an infestation is once reported, it should be followed each year with a subsequent report. If at any time the infestation dies down so that further reports are unnecessary, a final report should be submitted stating the condition.

4. More data concerning the reported outbreaks are desired. The new form calls for the presentation of such data under "Remarks", which should be in sufficient detail to permit the reader to form a fair conception of the situation.

It is sincerely believed that if these suggestions are followed the reports will be more valuable and will permit the drawing of accurate conclusions.

Respectfully submitted,

James C. Evenden
Entomologist

Approved.

Elers Koch
Chief of Management